

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

To:

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Date of mailing
(day/month/year) 24.08.2001

Applicant's or agent's file reference
57.0306 WO PCT

IMPORTANT NOTIFICATION

International application No.
PCT/GB00/02686

International filing date (day/month/year)
13/07/2000

Priority date (day/month/year)
14/07/1999

Applicant
SCHLUMBERGER HOLDINGS LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

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PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 57.0306 WO PCT	FOR FURTHER ACTION		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/GB00/02686	International filing date (<i>day/month/year</i>) 13/07/2000	Priority date (<i>day/month/year</i>) 14/07/1999	
International Patent Classification (IPC) or national classification and IPC E21B47/00			
Applicant SCHLUMBERGER HOLDINGS LIMITED et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☐ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 13/01/2001	Date of completion of this report 24.08.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Str mmen, H Telephone No. +49 89 2399 7345



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/02686

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

• **Description, pages:**

1-15 as originally filed

Claims, No.:

1-13 as received on 08/08/2001 with letter of 03/08/2001

Drawings, sheets:

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/02686

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☒ the entire international application.

☐ claims Nos. .

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 1-13.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/02686

Re Item VIII

Certain observations on the international application

- VIII-1 The amendments filed with the letter dated 03.08.2001 introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT. The reason for this being that it has not previously been stated that the newly filed set of claims relate to the subject-matter for which it was originally intended to obtain an International Preliminary Examination Report.

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Claims

1. A sensing device for acquiring downhole data in a fluid-containing wellbore, comprising a body associated with an acquisition means to acquire and store data relating to conditions within the fluid-containing wellbore, wherein the body is adapted to be transported by fluid flow.

2. A sensing device according to claim 1, wherein the body is adapted to be driven through the fluid.

3. A sensing device according to claim 1, wherein the body substantially surrounds and contains the acquisition means so as to protect the acquisition means from conditions in the fluid-containing wellbore.

4. A sensing device according to any of the preceding claims, wherein the body further comprises a releasable connection which allows the body to be secured to another structure within the wellbore ready for release to begin data acquisition.

5. A sensing device according to any of the preceding claims, wherein the body is provided with a fluid inlet to allow samples of fluid to be collected by the acquisition means during travel of the body through fluid.

6. A sensing device according to any of the preceding claims, wherein the acquisition means comprises a sensor means capable of acquiring and storing data

relating to conditions within the wellbore and a detection means to detect the pressure at which data is acquired.

7. A sensing device according to claim 6, wherein the acquisition means further comprises data storage means and data processing means to allow for analysis of the acquired data.

8. A sensing device according to claim 1, wherein the body is about 0.01m or less in diameter.

9. A sensing device according to claim 1, wherein the acquisition means comprises a chemical sensor.

10. A sensing device according to claim 1, wherein the acquisition means comprises a sensor adapted to sense the conductivity in the fluid.

11. A sensing device according to claim 1 wherein the sensing device communicates with the surface via a wireline prior to being released for transportation by fluid flow.

12. Use of a plurality of sensing devices according to any of claims 1 to 7, wherein the devices are placed within a protective container secured downhole and the container comprises an actuatable port to release the sensing devices

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13. A method of acquiring time-indexed and depth-indexed downhole data, the method comprising securing a sensing device in fluid-containing wellbore by use of a tethering means, actuating the tethering means so as to release the sensing device for travel through fluid, acquiring data relating to at least one characteristic associated with the wellbore as the sensing device travels through the fluid, and storing the acquired data within the sensing device for retrieval.